Edoardo Maria Ponti

Curriculum Vitae

Professional Experience

Aug 2022 **Lecturer in Natural Language Processing**, *School of Informatics, University of Edinburgh*.

Oct 2020 - now **Postdoctoral Fellow**, *Mila – Quebec Artificial Intelligence Institute*, Montreal.

Oct 2020 - now **Affiliated Researcher**, *University of Cambridge*.

Jul 2019 - Sep 2019 **AI / ML Research Intern**, *Apple*, Cupertino.
Activities: Multilingual dialogue for Siri.

Education

Oct 2016 - Sep 2020 **PhD, Computational Linguistics**, *University of Cambridge*.
Supervisors: Prof. Anna Korhonen and Dr. Ivan Vulić.
Examiners: Prof. Ivan Titov and Prof. Aline Villavicencio.
Thesis: *Inductive Bias and Modular Design for Sample-Efficient Neural Language Learning*.
College: St John's.

Oct 2014 - Jul 2016 **Master, Theoretical and Applied Linguistics**, *University of Pavia*.
Thesis: *Identifying Causal Relations between Events with Artificial Neural Networks*.
110/110 with distinction and publication recommended (extremely rare).
Erasmus exchange: University of Cambridge.

Oct 2011 - Jul 2016 **Diploma**, *IUSS – School for Advanced Studies*, Pavia.
With distinction. Courses: neuroscience and theoretical syntax.

Oct 2011 - Jul 2014 **Bachelor, Modern Literature**, *University of Pavia*.
College: Ghislieri. Erasmus exchange: University of Helsinki.

Grants

Mar 2020 **ERC Proof-of-Concept Grant**, *€150,000*.
Project: *Enabling Multilingual Conversational AI* (ongoing)
Recipients: Anna Korhonen (PI), Ivan Vulić, and me.

Mar 2019 **Google Faculty Research Award**, *$60,841*.
Project: *Automatic Induction and Adaptation of Syntactic Structures for Improved Cross-Lingual NLP* (funded the 4th year of my PhD)
Recipients: Anna Korhonen (PI), Roi Reichart, Ivan Vulić, and me.

Awards

Oct 2021	**Best Paper Award**, EMNLP 2021.
	Paper: *Visually Grounded Reasoning across Languages and Cultures*
Feb 2021	**ETH Zurich AI Centre Postdoctoral Fellowship**, (declined).
Aug 2019	**Best Paper Award**, Repl4NLP 2019.
	Paper: *Specializing Distributional Vectors of All Words for Lexical Entailment*
Jun 2017	**Parsons Fund**, *St John's College, University of Cambridge.*
Jun 2017	**Robert Sloley Award**, *St John's College, University of Cambridge.*
Dec 2016	**Young Researcher Best Paper Award**, *3rd Italian Conference of Computational Linguistics.*
2016	**Self-placed Fulbright Scholarship**, (declined).
Sep 2011 - Jul 2016	**Institute for Advanced Study Scholarship**, *University of Pavia.*
2014	**Collegio Ghislieri Scholarship**, *University of Pavia.*
	Best student in contest.

Publications

PhD Thesis

1. **Ponti, Edoardo Maria**. 2020. *Inductive Bias and Modular Design for Sample-Efficient Neural Language Learning*. University of Cambridge.

Journal Articles

1. **Ponti, Edoardo Maria**, Ivan Vulić, Ryan Cotterell, Marinela Parovic, Roi Reichart, and Anna Korhonen. 2021. *Parameter Space Factorization for Zero-Shot Learning across Tasks and Languages*. Transactions of the Association for Computational Linguistics (TACL) 9:410-428.
2. Vulić, Ivan⋆, Simon Baker⋆, **Edoardo Maria Ponti**⋆, Ulla Petti, Ira Leviant, Kelly Wing, Olga Majewska et al. 2020 *Multi-SimLex: A Large-Scale Evaluation of Multilingual and Cross-Lingual Lexical Semantic Similarity*. Computational Linguistics 46 (4):847–897.
3. **Ponti, Edoardo Maria**, Helen O'Horan, Yevgeni Berzak, Ivan Vulić, Roi Reichart, Thierry Poibeau, Ekaterina Shutova, and Anna Korhonen. 2019. *Modeling language variation and universals: A survey on typological linguistics for natural language processing*. Computational Linguistics, 45 (3): 559–601.
4. Gerz, Daniela, **Edoardo Maria Ponti**, Ivan Vulić, Jason Naradowsky, Roi Reichart, and Anna Korhonen. 2018. *Language Modeling for Morphologically Rich Languages: Character-Aware Modeling for Word-Level Prediction*. Transactions of the Association for Computational Linguistics (TACL) 6:451-465.
5. **Ponti, Edoardo Maria** and Silvia Luraghi. 2018. *Non-configurationality in diachrony: Correlations in local and global networks of Ancient Greek and Latin*. Diachronica 35(3).
6. **Ponti, Edoardo Maria**, Elisabetta Ježek and Bernardo Magnini. 2017. *Distributed Representations of Lexical Sets and Prototypes in Causal Alternation Verbs*. Italian Journal of Computational Linguistics, 3.1.

Book Editor

1. **Ponti, Edoardo Maria** and Marco Budassi (eds.). 2016. *Compter parler soigner. Between Linguistics and Artificial Intelligence*. Pavia University Press, Pavia.

Peer-Reviewed Conference Papers

1. **Ponti, Edoardo Maria**, Rahul Aralikatte, Disha Shrivastava, Siva Reddy and Anders Søgaard. 2021. *Minimax and Neyman–Pearson Meta-Learning for Outlier Languages*. In Findings of ACL 2021.

2. Vulić, Ivan, **Edoardo Maria Ponti**, Anna Korhonen and Goran Glavaš. 2021. *LexFit: Lexical Fine-Tuning of Pretrained Language Models*. In Proceedings of ACL 2021.

3. Majewska, Olga, Ivan Vulić, Goran Glavaš, **Edoardo Maria Ponti**, and Anna Korhonen. 2021. *Verb Knowledge Injection for Multilingual Event Processing*. In Proceedings of ACL 2021.

4. Vulić, Ivan, **Edoardo Maria Ponti**, Robert Litschko, Goran Glavaš, and Anna Korhonen. 2020. *Probing Pretrained Language Models for Lexical Semantics*. In Proceedings of EMNLP 2020.

5. Li, Yaoyiran, **Edoardo Maria Ponti**, Ivan Vulić, and Anna Korhonen. 2020. *Emergent Communication Pretraining for Few-Shot Machine Translation*. In Proceedings of COLING 2020.

6. Diana Rodríguez Luna, **Edoardo Maria Ponti**, Dieuwke Hupkes, Elia Bruni. 2020. *Internal and External Pressures on Language Emergence: Least Effort, Object Constancy and Frequency*. In Findings of EMNLP 2020.

7. **Ponti, Edoardo Maria**⋆, Goran Glavaš⋆, Olga Majewska, Qianchu Liu, Ivan Vulić, and Anna Korhonen. 2020. *XCOPA: A Multilingual Dataset for Causal Commonsense Reasoning*. In Proceedings of EMNLP 2020.

8. Lauscher, Anne, Ivan Vulić, **Edoardo Maria Ponti**, Anna Korhonen, and Goran Glavaš. 2019. *Informing Unsupervised Pretraining with External Linguistic Knowledge*. In Proceedings of COLING 2020.

9. **Ponti, Edoardo Maria**, Ivan Vulić, Ryan Cotterell, Roi Reichart, Anna Korhonen. 2019. *Towards Zero-shot Language Modeling*. In Proceedings of EMNLP 2019.

10. **Ponti, Edoardo Maria**, Ivan Vulić, Goran Glavaš, Roi Reichart, Anna Korhonen. 2019. *Cross-lingual Semantic Specialization via Lexical Relation Induction*. In Proceedings of EMNLP 2019.

11. Kamath, Aishwarya, Jonas Pfeiffer, **Edoardo Maria Ponti**, Goran Glavaš, and Ivan Vulić. 2019. *Specializing Distributional Vectors of All Words for Lexical Entailment*. In Proceedings of RepL4NLP-2019.

12. **Ponti, Edoardo Maria**, Ivan Vulić, Goran Glavaš, Nikola Mrkšić and Anna Korhonen. *Adversarial Propagation and Zero-Shot Cross-Lingual Transfer of Word Vector Specialization*. In: Proceedings of EMNLP 2018.

13. Gerz, Daniela, Ivan Vulić, **Edoardo Maria Ponti**, Roi Reichart and Anna Korhonen. *On the Relation between Linguistic Typology and (Limitations of) Multilingual Language Modeling*. In: Proceedings of EMNLP 2018.

14. **Ponti, Edoardo Maria**, Roi Reichart, Anna Korhonen and Ivan Vulić. 2018. *Isomorphic Transfer of Syntactic Structures in Cross-lingual NLP*. In: Proceedings of ACL 2018.

15. **Ponti, Edoardo Maria**, Ivan Vulić and Anna Korhonen. 2017. *Decoding Sentiment from Distributed Representations of Sentences*. In: Proceedings of *SEM 2017.

16. **Ponti, Edoardo Maria** and Anna Korhonen. 2017. *Event-Related Features in Feedforward Neural Networks Contribute to Identifying Implicit Causal Relations in Discourse*. In: Proceedings of the Workshop on Linking Models of Lexical, Sentential and Discourse-level Semantics.

Pre-prints

1. **Ponti**, **Edoardo Maria**, Julia Kreutzer, Ivan Vulić, and Siva Reddy. 2021. *Modelling Latent Translations for Cross-Lingual Transfer*. arXiv preprint arXiv:2107.11353.
2. Razumovskaia, Evgeniia, Goran Glavaš, Olga Majewska, **Edoardo Maria Ponti**, Anna Korhonen, and Ivan Vulić. 2021. *Crossing the Conversational Chasm: A Primer on Multilingual Task-Oriented Dialogue Systems*. arXiv preprint arXiv:2104.08570.
3. Wu, Shijie⋆, **Edoardo Maria Ponti**⋆, and Ryan Cotterell. 2021. *Differentiable Generative Phonology*. arXiv preprint arXiv:2102.05717.

Teaching Experience

Supervisor

Oct 2017 - May 2020 · **Computational Linguistics**, University of Cambridge.

Demonstrator

Oct 2017 - May 2018 · **Machine Learning and Real-world Data**, University of Cambridge.

Advisor

PhD research, Yaoyiran Li, Alan Ansell, and Evgeniia Razumovskaia (University of Cambridge). **Master's thesis**: Jia Wan and Huilei Wang (University of Cambridge), Florian Schottmann (ETH Zurich). **Bachelor's thesis**: Bonamy Meath-Baker (University of Cambridge). **Interns**: Lucas Torroba Hennigen and Benno Krojer (Mila).

Summer Schools

Jul 2017 · **Generative Lexicon: Integrating Theoretical and Distributional Methods**, Materials for the course at ESSLLI 2017.

Tutorials

Nov 2019 · **Semantic Specialization of Distributional Word Vectors**, Tutorial at EMNLP-IJCNLP 2019.

Conference Organisation

2019 - 2021 · **Workshop on Research in Computational Typology and Multilingual NLP (SIGTYP)**, co-located with ACL 2019, EMNLP 2020, and EMNLP 2021.

Oct 2018 - Dec 2019 · **Cambridge LTL Seminar Series**, coordinator.

Oct 2019 · **Conference '*Science, Policy, and the Public*'**, St John's College.

Feb 2019 · **St John's College Graduate Symposium**, University of Cambridge.

Dec 2014 · **Conference '*Compter, Parler, Soigner: Between Linguistics and Artificial Intelligence*'**, Collegio Ghislieri.

Service

Publicity/Sponsorship Chair, CoNLL 2018.

Program Co-Chair Assistant, ACL 2019.

Action Editor, *ACL Rolling Review*, 2021.

Area Chair, *EACL 2021 (Morphology), *SEM 2021 (Multilinguality).*

Reviewer, *ACL 2018, EMNLP 2018, NAACL 2019, *SEM 2019, ACL 2019, EMNLP 2019, AAAI 2019, ACL 2020 (**Outstanding Reviewer**), EMNLP 2020, EACL 2021 (**Outstanding Reviewer**), Artificial Intelligence, Natural Language Engineering, Language Resources and Evaluation, Journal of Historical Linguistics.*

Co-founder and Committee Member, *ACL Special Interest Group on Typology (SIGTYP).*

Recent Invited Talks

19 Mar 2021	**Deepmind, London**.
11 Mar 2021	**University of Helsinki**.
2 Mar 2021	**ETH Zurich**.
25 Feb 2021	**University of Cardiff**.
3 Nov 2020	**University of Mannheim**.
22 Oct 2020	**University of Cambridge**.
11 Mar 2020	**Apple, Cambridge**.
9 Mar 2020	**Mila Montreal**.
23 Jan 2020	**Turing Institute, London**.
2 Dec 2019	**Ludwig-Maximilians-Universität Munich**.

Technical Skills

○ Programming languages: Python, C++, R
○ Deep learning libraries: PyTorch, TensorFlow, Theano

Linguistic Skills

Italian	**Native speaker**	
English	**Fluent**	*IELTS 8*
French	**Intermediate**	
German	**Beginner**	*Start Deutsch 2 - Goethe-Institut*
Latin	**Reading and writing**	
Ancient Greek	**Reading and writing**	